David J. Klinke II

Assistant Professor of Chemical Engineering

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EMPLOYMENT & AFFILIATIONS

2006 – Present	Member, Center for Immunopathology & Microbial Pathogenesis **West Virginia University School of Medicine**, Morgantown, WV
2006 – Present	Adjunct Assistant Professor in Microbiology, Immunology & Cell Biology **West Virginia University School of Medicine**, Morgantown, WV
2006 – Present	Assistant Professor in Chemical Engineering **West Virginia University**, Morgantown, WV
2002 – 2005	Engineer II – Metabolic and Immunologic Diseases, In Silico R&D **Entelos, Inc.**, Foster City, CA
1999 – 2002	Engineer – Immunologic Diseases, In Silico R&D **Entelos, Inc.**, Foster City, CA
1996 – 1997	Ph.D. Intern **Exxon Research and Engineering Company**, Annandale, NJ

EDUCATION

Post-doctoral Associate, Chemical Engineering, Sandia National Laboratory, 1999
Combusion Research Laboratory, Mentor: M. Allendorf

Ph.D. Chemical Engineering, Northwestern University, June 1998
Thesis Title: Computational Developments in Heterogeneously Catalyzed Reaction Modeling: Mechanistic Elucidation of Fischer-Tropsch Synthesis. Advisor: L. J. Broadbelt

M.S. Chemical Engineering, Northwestern University, June 1995
Thesis Title: The Effect of Zirconia Loading on Alumina-Supported Catalysts for the Lean Reduction of NO by Propene. Advisor: H. Kung

B.S. Chemical Engineering, Virginia Tech, 1992
Summa Cum Laude, Commonwealth Scholar

HONORS & AWARDS

West Virginia University

Junior Faculty Travel Award *Vaccine Production: Potential Engineering Approaches to a Pandemic*, Sponsored by the National Academy of Engineering & The Institute of Medicine (2006)

Northwestern University

National Defense Science and Engineering Graduate Fellowship - Honorable Mention (1993)
Northwestern University Alumni Fellowship (1992)
Walter P. Murphy Fellowship (1992)

Virginia Tech

National Science Foundation Graduate Fellowship - Honorable Mention (1992)

DuPont PhD Fellowship (declined) (1992)
Gilbert and Lucille Seay Scholarship Award (1991)
Allied-Signal Scholarship Award (1991)
AIChE Scholarship Award (1991)

PROFESSIONAL MEMBERSHIPS

American Institute of Chemical Engineers, 1992 – Present

American Society for Engineering Education, 2006 – Present

Biomedical Engineering Society, 2006 – Present

American Chemical Society, 2008 – Present

PROJECT FUNDING

Current

- PhRMA Foundation "Interrogating Proteomic Profiles of Breast Cancer Using Reaction Pathway Analysis," 12/01/07–11/31/09 Role: PI.
- NIH R15CA132124, "Cell Heterogeneity and Emergent Trastuzumab Resistance in Breast Cancer: Concept Validation," 03/01/09-02/28/11 Role: PI.
- NIH R15CA132124-S2, "Cell Heterogeneity and Emergent Trastuzumab Resistance in Breast Cancer: Concept Validation," 06/01/09-09/30/10 Role: PI - supplement to support undergraduate research experience.
- NIH R15CA132124-S3, "Cell Heterogeneity and Emergent Trastuzumab Resistance in Breast Cancer: Concept Validation," 05/01/09-02/28/11 Role: PI - diversity supplement to support a student from an under-represented group.
- NASA WV Space Grant Consortium, "Validating a Scaling Factor for radiation-induced DNA damage and repair," 05/16/09-05/15/10 Role: Mentor - grant directly to student.
- NIH R56AI076221, "Dendritic Cell Heterogeneity in TLR4 Signaling: Concept Validation," 09/16/09-08/31/10 Role: PI.

DISSEMINATION OF RESEARCH

Refereed Journal Articles

1. Klinke, D. J. and Broadbelt, L. J.; "Mechanism Reduction during Computer Generation of Compact Reaction Models", *AIChE J.* 43(1997) 1828-1837.
2. Klinke, D. J.; Wilke, S.; and Broadbelt, L. J.; "A Theoretical Study of Carbon Chemisorption on Ni(111) and Co(0001) Surfaces", *J. Catal.* 178(1998) 540-554.
3. Klinke, D. J.; "Computational Developments in Heterogeneously Catalyzed Reaction Modeling: Mechanistic Elucidation of Fischer-Tropsch Synthesis", Ph.D. Dissertation, Northwestern University June 1998.
4. Klinke, D. J. and Broadbelt, L. J.; "Construction of a Mechanistic Model of Fischer-Tropsch Synthesis on Ni(111) and Co(0001) Surfaces", *Chem. Eng. Sci.* 54(1999) 3379-3389.
   This publication was the first application of an automatic network generation algorithm to heterogeneous catalysis.
5. Klinke, D. J.; Dooling, D. J.; and Broadbelt, L. J.; "A Theoretical Study of Methylidyne Chemisorption on Ni(111) and Co(0001) Surfaces"; *Surf. Sci.* 425(1999) 334-342.

6. Klinke, D. J. and Broadbelt, L. J.; "A Theoretical Study of Hydrogen Chemisorption on Ni(111) and Co(0001) Surfaces", *Surf. Sci.* 429(1999) 169-177.
7. Broadbelt, L. J. and Klinke, D. J.; "Kinetics of Catalyzed Reactions - D (Heterogeneous)" in *Encyclopedia of Catalysis*, Istvan T. Horvath (Editor-in-Chief), ISBN 0-471-24183-0, pp. 4772, December 2002.
8. Klinke, D. J.; "The Ratio of P40 Monomer to Dimer is an Important Determinant of IL-12 Bioactivity", *J. Theor. Bio.* 240(2006) 323-335.
9. Klinke, D. J.; "An Age-Structured Model of Dendritic Cell Trafficking in the Lung", *Am. J. Physiol. Lung Cell. Mol. Physiol.* 291(2006) L1038-L1049.
10. Klinke, D. J.; "A Multi-scale Model of Dendritic Cell Education and Trafficking in the Lung: Implications for T Cell Polarization", *Ann. Biomed. Eng.* 35(2007) 937-955.
11. Klinke, D. J.; "Extent of Beta Cell Destruction is Important but Insufficient to Predict the Onset of Type 1 Diabetes Mellitus", *PLoS ONE* 3(2008) e1374.
12. Klinke, D. J.; "Integrating Epidemiological Data into a Mechanistic Model of Type 2 Diabetes: Validating the Prevalence of Virtual Patients", *Ann. Biomed. Eng.* 36(2008) 321-334.
13. Klinke, D. J.*; Ustyugova, I. V.; Brundage, K. M.; Barnett, J. B.; "Modulating Temporal Control of NF-kappaB Activation: Implications for Therapeutic and Assay Selection", *Biophys. J.* 94(2008) 4249-4259. *corresponding author.
14. Klinke, D. J.*; Brundage, K. M.;"Scalable analysis of flow cytometry data using R/Bioconductor", *Cytometry A* 75(2009) 699-706. *corresponding author.
15. Klinke, D. J.; "Validating a Dimensionless Number for Glucose Homeostasis in Humans", *Ann. Biomed. Eng.* (2009) in press.
16. Leski, T.A.; Caswell, C.C.; Pawlowski, M.; Bujnicki, J.M.; Hart, S.J.; Klinke, D. J.; Lukomski, S.; "*bcl*-gene Polymorphism in the Genomes of the Members of of *Bacillus cereus* Group: Feasibility Studies of Anthrax Detection and Strain Fingerprinting", *Appl Environ Microbiol* (2009) *in press.*
17. Klinke, D. J.; "An Empirical Bayesian Approach for Model-based Inference of Cellular Signaling Networks", *BMC Bioinformatics* (2009) *accepted in principle.*
18. Finley, S.D.; Gupta, D.; Cheng, N.; Klinke, D. J.; "Inferring Relevant Control Mechanisms for Interleukin-12 Signaling in Naïve CD4+ T Cells", *submitted* (2009).
19. Klinke, D. J.; "Signal Transduction Networks in Cancer: Quantitative Parameters Influence Network Topology", *submitted* (2009).
20. Klinke, D. J.; "Understanding Human Physiology via Engineering Design: The Role of Mathematical Prototyping", *to be submitted* (2009).

Other Publications

21. Grenda, J. M.; Susnow, R. G.; Klinke, D. J.; Peczak, P.; Dean, A. M.; and Green W. H., "Computational Construction of Kinetic Models Using a Rate-Based Algorithm", in *Proceedings of the 4th International Conference on Chemical Kinetics*, Gaithersburg, MD, July 1997.

22. Broadbelt, L. J.; Dooling, D. J.; and Klinke, D. J., "Theoretical investigations of nonuniformity in heterogeneous catalysis", Abstr. A.C.S., 217(1999) 78-CATL.
23. Klinke, D.J.; Lewis, A. K.; Paterson, T.; Leong, C. C.; Defranoux, N.; and Stokes, C. L.; "Asthma PhysioLab: A Dynamic, Computer-based Mathematical Model of Atopic Asthma", Ann Biomed Eng., 28(Suppl. 1)(2000) S-27.
24. Lewis, A. K.; Klinke, D. J.; and Stokes, C. L.; "The Role of Beta2-Adrenergic Receptor Polymorphisms in Clinical Outcomes Following Chronic Beta2-Agonist Use"; Am. J. Resp. Crit. Care Med. 163(2001) A143.
25. Stokes, C. L.; Lewis, A. K.; Subramaniana, K.; Klinke, D. J.; Okino, M.; and Edelman, J. M.; "A Computer Model of Chronic Asthma With Application to Clinical Studies: Example of Treatment of Exercise-induced Asthma"; J. Allergy Clin. Immunol. 107(2001) 933.
26. Klinke, D. J.; Lewis, A. K.; Wong, S.-P.; and Stokes, C. L.; "Airway Hyperresponsiveness: Exploration of Mechanisms Using a Dynamic, Computer-based Model of Asthma"; Am. J. Resp. Crit. Care Med. 163(2001) A832.
27. Struemper, H.; Ramanujan, S.; Soderstrom, K.; Dubnicoff, T.; Shoda, L.K.M.; Klinke, D.J.; Lewis, A.K.; and Defranoux, N.; "Partial Independence of Tumor Necrosis Factor Alpha and Interleukin 1 in Rheumatoid Arthritis: Predictions from Large-Scale Biosimulation"; Arthritis & Rheumatism 46(Suppl.)(2002) S262.
28. Klinke, D.J.; Okino, M; Shoda, L.K.M.; "The Bioactivity of IL-12: There's More to the Story than P70 or P40"; FASEB Journal 17(2003) C131.
29. Kelly, S.D.; Klinke, D.J.; Leong, C.; Lewis, A.K.; Okino, M.S.; Paterson, T.S.; Shoda, L.K.M.; Stokes, C.; Struemper, H.K.; "Method and apparatus for computer modeling of an adaptive immune response", US Patent Application 10/154,123 (2003).
30. Defranoux, N.A.; Dubnicoff, T.B.; Klinke, D.J.; Lewis, A.K.; Paterson, T.S.; Ramanujan, S.; Shoda, L.K.M.; Soderstrom, K.P.; Struemper, H.K.; "Method and apparatus for computer modeling a joint", US Patent 6,862,561 (2005).
31. Friedrich, C.M.; Kansal, A.; Klinke, D.J.; Michelson, S.G.; Paterson, T.S.; Polidori, D.; Trimmer, J.; Wennerberg, L.G.; "Defining Virtual Patient Populations", US Patent Application 11/346,990 (2006).
32. Klinke, D.J.; "Engineering a New Vision for Drug Discovery"; in *Proceedings of the Science, Technology, and Research Symposium*, Morgantown, WV, September 2007.
33. Defranoux, N.A.; Dubnicoff, T.B.; Klinke, D.J.; Lewis, A.K.; Paterson, T.S.; Ramanujan, S.; Shoda, L.K.M.; Soderstrom, K.P.; Struemper, H.K.; "Method and apparatus for computer modeling a joint", US Patent 7,472,050 (2008).

Invited Presentations

1. Stokes, C. L. and Klinke, D. J. (joint presentation); "An Integrative Mathematical Model of Asthma: From Biochemistry to Pathophysiology", Pacific Northwest National Laboratory, Richland, WA, August 4, 2000.
2. Klinke, D. J.; "Systems Biology and the Lung: A Mechanistic Modeling Perspective", Pacific Northwest National Laboratory, Richland, WA, January 2005.

3. Klinke, D. J.; "Systems Biology and Cancer: A Mechanistic Modeling Perspective", Department of Molecular Therapeutics, University of Texas M.D. Anderson Cancer Center, Houston, TX, May 2005.
4. Klinke, D. J.; "Systems Biology and Engineering: A Mechanistic Modeling Perspective", Department of Chemical Engineering, West Virginia University, Morgantown, WV, July 2005.
5. Klinke, D. J.; "Developing Predictive Detailed Chemical Kinetic Models of EGF Receptor Signaling", Translational Cancer Research Seminar, Mary Babb Randolph Cancer Center, Robert C. Byrd Health Sciences Center, West Virginia University, Morgantown, WV, March 2006.
6. Klinke, D. J.; "IL-12 Bioactivity and Dendritic Cell Trafficking: Examples of Systems Biology in Immunology", Cell and Molecular Biology Seminar Series, Department of Microbiology, Immunology & Cell Biology, Robert C. Byrd Health Sciences Center, West Virginia University, Morgantown, WV, April 2006.
7. Klinke, D. J.; "Application of Engineering Analysis in Immunology and Drug Discovery", Department of Chemical Engineering, Virginia Tech, Blacksburg, VA, April 2007.
8. Klinke, D. J.; "Systems Biology by Example: Modulating the Dynamics of NF-kB Activation", Center for Respiratory Biology and Lung Disease, Department of Neurobiology and Anatomy, Robert C. Byrd Health Sciences Center, West Virginia University, Morgantown, WV, November 2007.
9. Klinke, D. J.; "R/Bioconductor - Analysis Tools for Flow Cytometry", Bioinformatics Interest Group, Department of Microbiology, Immunology & Cell Biology, Robert C. Byrd Health Sciences Center, West Virginia University, Morgantown, WV, December 2007.
10. Klinke, D. J.; "A Bayesian Perspective on Understanding Cell Signaling Pathways using Mathematical Models", Department of Chemical and Biochemical Engineering, University of Maryland, Baltimore County, Baltimore, MD, April 2009.

Contributed Meeting Presentations (speaker in bold)

11. **Klinke, D. J.** and Broadbelt, L. J., "Computer-Generated Reaction Mechanisms of Pentadecylbenzene Pyrolysis: An Illustrative Example", AIChE Annual Meeting Student Poster Session, Chicago, IL, November 1996.
12. **Klinke, D. J.** and Broadbelt, L. J., "Computational Developments in Heterogeneously Catalyzed Reaction Modeling: Mechanistic Elucidation of Fischer-Tropsch Synthesis", AIChE Annual Meeting, Los Angeles, CA, November 1997.
13. **Klinke, D. J.** and Broadbelt, L. J., "Computational Developments in Heterogeneously Catalyzed Reaction Modeling: Mechanistic Elucidation of Fischer-Tropsch Synthesis", Catalysis Club of Chicago Spring Symposium, May 1998.
14. **Klinke, D. J.**; Bastasz, R.; and Allendorf, M.D.; "An Investigation into the Transient Behavior of Palladium Metal Based Hydrogen Sensors", 59th Annual Physical Electronics Conference, Berkeley, CA, July 1999.
15. **Klinke, D. J.**; Lewis, A. K.; Paterson, T.; Leong, C. C.; Defranoux, N.; and Stokes, C. L.; "Asthma PhysioLab: A Dynamic, Computer-based Mathematical Model of Atopic Asthma", Biomedical Engineering Society Annual Meeting, Seattle, WA, October 2000.

16. **Klinke, D. J.**; Lewis, A. K.; Wong, S.-P.; and Stokes, C. L.; "Airway Hyperresponsiveness: Exploration of Mechanisms Using a Dynamic, Computer-based Model of Asthma", American Thoracic Society Annual Meeting, San Francisco, CA, May 2001.
17. **Klinke, D. J.**; Lewis, A. K.; and Stokes, C. L.; "Contributions of Th2 Cytokines to Airway Hyperresponsiveness in Asthma", Keystone Symposia: "Rethinking the Pathogenesis of Asthma", Santa Fe, NM, Feb 2002.
18. **Klinke, D.J.**; "The Bioactivity of IL-12: There's More to the Story than P70 or P40"; Mathematical Biosciences Institute Workshop on Immunology Models: Cell Signaling and Immune Dynamics, Ohio State, OH, May 2003.
19. **Klinke, D. J.**; "The Bioactivity of IL-12: An Illustrative Example of Modeling Cytokine Causality", Biomedical Engineering Society Annual Meeting, Chicago, IL, October 2006.
20. **Klinke, D. J.**; "An Age-Structured Model of Dendritic Cell Trafficking in the Lung", Biomedical Engineering Society Annual Meeting, Chicago, IL, October 2006.
21. **Barnett, J. B.**; Ustyugova, I. V.; Klinke, D. J.; Brundage, K.; and Harty, T. M.; "Changes in IkB and NF- B activation in macrophages treated with dichloropropionaniline", The 7th International Conference on Systems Biology, Yokohama, Japan, October 2006.
22. **Klinke, D. J.**; "The Bioactivity of IL-12: There's More to the Story than P70 or P40", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2006.
23. **Klinke, D. J.**; "Multi-scale Modeling of Dendritic Cell Trafficking in the Lung", American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2006.
24. **Schwertfeger, Z.**; Klinke, D. J.; "Modeling the Onset of Type 1 Diabetes Mellitus", 2007 AIChE Mid-Atlantic Regional Conference, Bucknell University, PA, April 2007 [**won third place**].
25. **Harty, T.**; Klinke, D. J.; "Quantifying the Dynamics of IL-12 Receptor Binding", 2007 AIChE Mid-Atlantic Regional Conference, Bucknell University, PA, April 2007.
26. **Klinke, D. J.**; Ustyugova, I. V.; Brundage, K.; and Barnett, J. B.; "Potentiation of early NF-κB activation in macrophages treated with dichloropropionaniline", Biochemical Engineering XV Engineering Biology from Biomolecules to Complex Systems, Quebec City, Canada, July 2007.
27. **Klinke, D. J.**; "Engineering a New Vision of Drug Discovery", Science, Technology and Research Symposium, Morgantown, WV, September 2007.
28. **Ellis, L.**; Walton, C.; Luo, J.; Barnett, J.; Klinke, D. J.; "Comparative Proteomic Analysis of Cellular Models of Breast Cancer using Differential in-Gel Electrophoresis", Science, Technology and Research Symposium, Morgantown, WV, September 2007.
29. **Schwertfeger, Z.**; Klinke, D. J.; "Modeling the Onset of Type 1 Diabetes Mellitus", Science, Technology and Research Symposium, Morgantown, WV, September 2007 [**won second place**].
30. **Knipe, J. M.**; Cuff, C. F.; Klinke, D. J.; "Identifying the Differentiation Program in Dendritic Cells", Science, Technology and Research Symposium, Morgantown, WV, September 2007 [**won honorable mention**].

31. **Klinke, D. J.**; Ustyugova, I. V.; Brundage, K.; and Barnett, J. B.; "Potentiation of LPS-induced early NF-κB activation in macrophages treated with DCPA", Biomedical Engineering Society Annual Meeting, Los Angeles, CA, September 2007.
32. **Klinke, D. J.**; "Towards Opening the Immune Loop: The Role of Dendritic Cells in Shaping Adaptive Immunity", Biomedical Engineering Society Annual Meeting, Los Angeles, CA, September 2007.
33. **Klinke, D. J.**; Ustyugova, I. V.; Brundage, K.; and Barnett, J. B.; "Quantifying Differential Activation of NF-κB-Response Genes by LPS in Macrophages Using 3,4-DCPA as a Molecular Probe", American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.
34. **Klinke, D. J.**; "A Multi-scale Model of Dendritic Cell Education and Trafficking in the Lung", American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.
35. **Klinke, D. J.**; "Revisiting Beta Cell Destruction at the Onset of Type 1 Diabetes Mellitus", American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.
36. **Knipe, J. M.**; Cuff, C. F.; Klinke, D. J.; "Identifying the Differentiation Program in Dendritic Cells", American Institute of Chemical Engineers National Meeting, Undergraduate Poster Competition, Salt Lake City, UT, November 2007 [**won first place in Food, Pharmaceutical and Biotechnology Division**].
37. **Klinke, D. J.**; "Validating a Dimensionless Number for Glucose Homeostasis in Humans", National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Diabetes Genes and Beta Cell Function: How can we assemble the puzzle?, Bethesda, MD, April 2008.
38. **Klinke, D. J.**; "Signal Transduction Networks in Cancer: Quantitative Parameters Influence Network Topology", Gordon Research Conference on Growth Factors and Cell Signaling, Oxford, UK, August 2008.
39. **Klinke, D. J.**; "Validating a Dimensionless Number for Glucose Homeostasis in Humans", Biomedical Engineering Society Annual Meeting, St. Louis, MO, October 2008.
40. **Klinke, D. J.**; "The Influence of Quantitative Parameters on the Topology of Signal Transduction Networks in Cancer", Biomedical Engineering Society Annual Meeting, St. Louis, MO, October 2008.
41. **Klinke, D. J.**; "Validating a Dimensionless Number for Glucose Homeostasis in Humans", American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, November 2008.
42. **Finley, S. D.**; Gupta, D.; Broadbelt, L. J.; Brundage, K. M.; Klinke, D. J.; "Dynamics and Regulation of IL-12 Receptor Signaling", American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, November 2008.
43. **Klinke, D. J.**; "Signal Transduction Networks in Cancer: Quantitative Parameters Influence Network Topology", American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, November 2008.
44. **Knipe, J. M.**; Cuff, C. F.; Klinke, D. J.; "Principal Component Analysis of the Differentiation of Dendritic Cells", American Institute of Chemical Engineers National Meeting, Undergraduate Poster Competition, Philadelphia, PA, November 2008.

45. **Klinke, D. J.**; "Inferring Relevant Control Mechanisms for Interleukin-12 Signaling in Naive CD4+ T Cells", Biochemical Engineering XVI - Past, Present & Future, Burlington, VT, July 2009.

TEACHING EXPERIENCE

Course Instructor [West Virginia University]

Chemical Reaction Engineering (ChE 325)
Spring 2006 – 16 students; Spring 2007 – 22 students; Spring 2009 – 11 students;
Chemical Engineering Graduate Seminar (ChE 796)
Fall 2006 – 28 students; Spring 2007 – 28 students;
Introduction to Biomedical Engineering (ChE 381)
Spring 2008 – 6 students; Fall 2008 – 6 students; Fall 2009 – 16 students;
Human Physiology: Quantitative Laboratory (BIOL 236)
Spring 2009 – 12 students; Spring 2010;

Guest Lecturer

Research Experience Seminar (HONOR 494K) – WVU
Summer 2006 – 30 students;
Introduction to Physiological Modeling (BEH 103) – M.I.T., Cambridge, MA
December 2001 – 50 students;

Teaching Assistant [Northwestern University]

Chemical Engineering Kinetics and Reactor Design (ChE 408)
Thermodynamics (ChE 211)
Chemical Engineering Laboratory (ChE 342)
Process Dynamics and Control (ChE 341)

STUDENT SUPERVISION

Post-doctoral Fellows

- Yogesh Kulkarni, "Proteomic Profiling of Breast Cancer Models Resistant to Molecularly Targeted Therapies", Aug 2008 – Present.

Graduate Students

- Ning Cheng, "Understanding Emergent Resistance to Herceptin: Modeling EGFR", M.S., *expected 12/2009*.
- Huanling Liu, "A dynamic scaling approach to Rheumatoid Arthritis", M.S., *expected 12/2009*.
- Santhoshi Dixit, "Multiscale Modeling of TLR4 Signaling", M.S., *expected 12/2009*.
- Stacey Finley, Northwestern University, "Modeling IL-12 Signal Transduction and Receptor Trafficking", (joint with L. Broadbelt) Fall 2007 – June 2009.
- Vivian Suarez, "Measuring Proteomic Profiles of Breast Cancer Models", M.S., *expected 5/2010*.
- Megan Moran, "Understanding Emergent Resistance to Herceptin: Modeling EGFR", non-degree, Fall 2006 – Spring 2007.
- Huang Chiao Huang, "Mechanistic Modeling of Toll-like Receptor 4 Signaling", non-degree, Spring 2007.

Honors B. S. Graduates

- Tirzah Mills, "Modeling the Expansion of CD4+ T Cell in the Lung: A Novel Applica-

tion of Software for Population Dynamics", B.S.Ch.E. (Undergraduate Honors Thesis), 5/2007.

- Robin Glebes, "The Bioactivity of IL-12", B.S.Ch.E. (Undergraduate Honors Thesis), 5/2007.
- Bradley May, "2D Electrophoresis Gel Streaking", B.S.Ch.E. (Undergraduate Honors Thesis), 5/2009.

Undergraduate Research Students

- Kristen Kief, WVU, "Quantifying the Signal-to-Noise Characteristics of Transcription Factor Assays", Summer 2009.
- Joseph Widmeyer, WVU, "Validating a Dimensionless Number for Glucose Homeostasis in Zucker Rats", Summer 2008 - Present.
- Thomas Hardy, WVU, "Quantifying the Dynamics of IL-12 Receptor Binding", Summer 2006 – Spring 2007.
- Zack Schwertfeger, WVU, "Modeling the Onset of Type 1 Diabetes Mellitus", Summer 2006 – May 2008.
- Jennifer Knipe, WVU, "Reverse Engineering the Developmental Program of Mouse Dendritic Cells", (joint with C. Cuff) Spring 2007 – present.
- Deepti Gupta, Northwestern University, "Modeling IL-12 Signal Transduction and Receptor Trafficking", (joint with K. Brundage) Summer 2007 – May 2008.
- Lucas Ellis, Cal Poly San Luis Obispo, "Global Proteomics Assessment of Breast Cancer Cells using 2D-DiGE", (joint with J. Barnett and J. Luo) Summer 2007.

REVIEWER

Proposal Review Panels

NIH ZRG1 Biomedical Information Science and Technology (ZRG1 BST-D50), March 2004.
NIH ZRG1 Computational Biology (ZRG1 BST-D01), June 2004.
NIH ZCA1 Integrative Cancer Biology (ZCA1 SRLB-C (J1)), November 2009.
NSF Cyber-Enabled Discovery and Innovation, February 2008.
NSF October 2009.

Ad hoc Journal Reviewer

International Journal of Chemical Kinetics, IEEE Transactions on Biomedical Engineering, Journal of Clinical Epidemiology, Biophysical Journal

SERVICE

Conference Session Organizer / Chair

- AIChE National Annual Meeting, San Francisco, November, 2006. "Advances in Biocatalysis and Protein Engineering" Chair: A. Bommarius; Co-Chair: D. J. Klinke.
- AIChE National Annual Meeting, San Francisco, November, 2006. "Computational Biology: Systems Modeling I" Chair: V. Hatzimanikatis; Co-Chair: D. J. Klinke.
- AIChE National Annual Meeting, San Francisco, November, 2006. "Computational Biology: Systems Modeling II" Chair: V. Hatzimanikatis; Co-Chair: D. J. Klinke.
- Biochemical Engineering XV: Engineering Biology from Biomolecules to Complex Systems; Quebec City, Canada, July, 2007. Poster Session Chair: D. J. Klinke.
- AIChE National Annual Meeting, Salt Lake City, November, 2007. "Systems Biotechnology" Chair: N. Lin; Co-Chair: D. J. Klinke.

- AIChE National Annual Meeting, Salt Lake City, November, 2007. "Advances in Biocatalysis and Protein Engineering" Chair: D. J. Klinke; Co-Chair: A. Bommarius.
- ACS Biotechnology Division (BIOT) Strategic Planning Meeting, Bethesda, MD, June, 2008.
- AIChE National Annual Meeting, Philadelphia, November, 2008. "Intracellular Processes I" Chair: Dacheng Ren; Co-Chair: D. J. Klinke.
- AIChE National Annual Meeting, Philadelphia, November, 2008. "Intracellular Processes II" Chair: Dacheng Ren; Co-Chair: D. J. Klinke.
- AIChE National Annual Meeting, Philadelphia, November, 2009. "Receptor-Mediated Phenomena" Chair: David J. Klinke; Co-Chair: Kaushal Rege.

College/University Committees

- Biomedical Engineering Task Force, Fall 2006
- WVNano Faculty Search Committee, Fall 2007

Department Committees

- American Institute of Chemical Engineers Student Chapter Assistant Advisor, 2006 - present.
- Ad hoc Committee for assessing a Biomedical Option, Spring 2006

Dissertation / Thesis Committees

Student	Degree	Year	Primary Advisor	Dept/School
J. N. Stover	M.D./Ph.D.	2012	M. Pei	Orthopaedics/SOM
F. A. Pino-Romainville	Ph.D.	2009	I. Celik	MAE/CEMR
R. Fecek	Ph.D.	2010	C. Cuff	MICB/SOM